

Tumwater Coliform and Chlorination FAQ Sheet

In October 2004, some of Tumwater's routine coliform bacteria tests were positive for total coliform bacteria. This has resulted in a water quality violation, as determined by the Washington Department of Health. Beginning about November 15, 2004, we will begin temporarily chlorinating our water to eliminate the bacteria. Chlorine will probably be added to our water for about two months to ensure it is effective.

1. Is the Water Safe to Drink?

Tumwater's water is safe to drink for our general public. However, as an added precaution, people with compromised immune systems may wish to consult with their health care providers about the presence of coliform bacteria. (Even though the chlorine will likely kill or inactivate the coliform in the system, we cannot definitively say that the system is free of contamination until we have monitoring results for an entire month that show no presence of coliform.) Since total coliform bacteria are an indicator that other bacteria may be present, we want to ensure the situation is properly taken care of.

2. What are Total Coliform Bacteria?

Coliform bacteria are organisms that are present in the air, soil, and surface waters like lakes and streams, as well as the digestive tracts of all warm-blooded animals and humans. Coliform bacteria are normally present in the environment and are generally harmless. However, the presence of coliform bacteria in drinking water indicates that other disease-causing organisms (pathogens) may be present in the water system.

3. Why Is This Occurring?

The exact cause of these occurrences is difficult to pinpoint since coliform bacteria are ever-present in the environment. It is possible that soil containing coliform bacteria entered the distribution system from a construction project or water line repair. It is also possible that there was an undetected cross connection that carried bacteria into the system.

A cross connection is a situation where water flows backward from a home or business into the water distribution system. If a hose is submerged in polluted or contaminated water, the water can be sucked back into the pipes and into the water system if there is a drop in pressure. Drops in pressure are not common, but may occur when water demand increases suddenly (e.g. main break or fire demand).

The Tumwater Water Utility has a cross connection control program that requires businesses and irrigation systems to regularly test and repair their backflow prevention devices. Inexpensive backflow prevention devices are encouraged for residential use as well and should be installed on all threaded faucets around your home. They are available at many hardware stores and home improvement centers.

4. What Is Chlorine and Why Is It Being Added to the System?

Chlorine is a naturally occurring element that is commonly used as a disinfectant in drinking water. Since the early 1900's, water systems in the U.S. have used chlorine to eliminate bacteria (a process called chlorination). Chlorine is used by hundreds of water systems across the country today for temporary or permanent disinfection of their water systems. For more information, please see this link:

www.doh.wa.gov/ehp/dw/Publications/331-253_chlorination_of_drinking_water_5-24-04.pdf.

Because total coliform bacteria were found in the Tumwater water system, chlorine is being added temporarily. Chlorine will be injected into water mains and reservoirs that supply the entire system. Chlorine will be gradually introduced and held in the distribution system at the level of 0.2 - 0.5 ppm (parts per million) (equivalent to about one drop in 44 gallons of water) for a period of at least 60 days.

It is expected that all remaining coliform bacteria will be eliminated because of this process. Once this has been confirmed, chlorination will stop and normal water service will be reinstated. If monitoring results show that coliform bacteria remain, the chlorination process may be prolonged. The earliest that we anticipate completing the chlorination and returning to non-disinfected water is sometime in January 2005.

5. What Areas Will Be Chlorinated?

The entire water system will be disinfected, affecting all customers that receive water service from the City of Tumwater.

6. How Much Chlorine Will Be in the Water?

We will add enough chlorine to the water to maintain a chlorine residual for 0.2 - 0.5 ppm (parts per million) (0.5 ppm is equivalent to about 1 drop in 44 gallons of water). A typical swimming pool would have anywhere from 2.0 to 5.0 mg/L (ppm) of chlorine residual--roughly 4 to 10 times higher than typical drinking water. Many people will be able to smell or taste a small difference, but it will not be as strong as what is used in swimming pools.

7. What Should I Expect During Chlorination?

Because of the natural mineral content of our groundwater, it is possible that chlorine will react with iron and manganese to give the water a yellow or brown tint. Chlorine may cause material inside the water lines to slough off and enter the distribution system, also resulting in discoloration. Of course, chlorine has a distinct odor and may affect the taste of the water. These changes do not affect the safety of the water.

Throughout the response period and the chlorination process, the Tumwater Water Utility will continue to monitor the water carefully to ensure that it meets state and

federal drinking water standards. If it does not, we will contact you and issue press release to inform you of the situation. We will be monitoring the water to assure that it contains an appropriate and effective amount of chlorine.

If your water is not running clear, letting the water run for 15-30 minutes may clear it up. If the water does not clear after running for 30 minutes, please call Public Works Operations at 360-754-4150 during regular business hours or 360-507-7634 for emergencies after hours.

Avoid using discolored water for drinking and cooking. Whenever possible, avoid the use of discolored water to do laundry, as this may result in stained clothes items. The water can be used for dishwashing, bathing, and outdoor uses. Customers with skin sensitivities to chlorine may wish to purchase an inexpensive chlorine filter attachment for their shower or bathtub faucet.

Because chlorine has adverse effects for fish and aquatic life, treat water for use in aquariums with a dechlorinating conditioner, available at many locations where pet supplies are sold. Customers with home dialysis systems should recognize that chlorine and other materials might be present in the water and maintain their filter systems accordingly.

8. How Do I Keep My Pool/Hot Tub from Turning Brown/Green?

- Avoid filling your pool/tub when water is discolored. Check on a filling pool/tub to be sure that water is running clear throughout the filling period.
- Chlorine in the fill water may cause your pool water to turn green. You may need to adjust your usual mix of pool chemicals and/or consult your pool care specialist.

9. What Can I Do If My Water Smells or Tastes Like Chlorine?

- Try setting a pitcher of water aside overnight (on the counter or in the refrigerator). The chlorine dissipates over time into the air, so the smell and taste should be less noticeable.
- Use a pitcher or faucet filter system.
- Add a slice of lemon to your water glass.

10. How Can I Avoid Skin Reactions from Exposure to Chlorine?

- The level of chlorine in the water is 4 to 10 times less than that found in a typical swimming pool. If your family members do not have reactions to swimming pools, bathing in this water should not cause a reaction.
- Inexpensive (\$15) chlorine filters for showers and tubs are available at home improvement centers.

11. Will I Be Reimbursed for the Bottled Water and/or Filters I Buy to Remove the Chlorine?

The Tumwater Water Utility is not offering compensation for bottled water or filters. Use of chlorine is a temporary measure to resolve the coliform issue.

12. How Much Will It Cost Me to Run My Water for 30 Minutes?

Running the water from multiple faucets/hoses for 30 minutes is estimated to cost less than \$1.00 for the average Tumwater resident, based on current water costs.

13. How Long Will It Take to Resolve the Issue?

The Utility expects to begin chlorination mid-November and continue chlorination for at least 2 months. This period should be sufficient to eliminate the coliform bacteria from the distribution system. However, it is possible that chlorination will need to be continued longer. We will keep you informed of our progress, particularly if we will chlorinate the water for more than two months.

We will make every effort to minimize the chlorination period, since the elimination of the coliform bacteria in order to supply safe drinking water to our customers is our top priority.

14. How Will I Know When the Issue is Resolved?

Customers can check the City's web site, www.ci.tumwater.wa.us, for updates on our efforts. Also, local media, including The Olympian, will include notices indicating when the chlorination period is over and the coliform bacteria are no longer present. If you have additional questions, please call Tumwater Public Works at 754-4140.

15. I Haven't Received Notice of the Chlorination. Why?

- By Wednesday, November 3, 2004, a notice will be sent to all affected customers. The chlorination notice will be sent to the mailing addresses of all Tumwater water customers who receive a water bill. If the customer is a renter or customer of a private water system that purchases water from Tumwater, they may not have received a notice. However, information about chlorination has been included in The Olympian, the city web site, and other local media.
- If the customer did not receive the mailing, you may want to ask:
 - o Do you pay a Tumwater water bill?
 - Are you a renter who doesn't pay the water bill?
 - Do you live in a community that buys water from Tumwater but individual residents don't receive a Tumwater bill?
 - o Do you receive mail on-site?
 - o Are you located within the affected area?

16. Who Should I Call If I Have More Questions?

If you have additional questions or concerns, please contact Tumwater Water Resources at 360-754-4140 or visit the City's web site at www.ci.tumwater.wa.us. Customers can also contact the Washington State Department of Health Office of Drinking Water Southwest Regional Operations at 360-664-0768.